

The small ribosomal subunit from *Thermus thermophilus* at 4.5 Å resolution: pattern fittings and the identification of a functional site

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The electron density map of the small ribosomal subunit from *Thermus thermophilus* constructed at 4.5 Å resolution shows the recognizable morphology of this particle as well as structural features that were interpreted as ribosomal RNA and proteins. Unbiased assignments, carried out by quantitative covalent binding of heavy-atom compounds at predetermined sites, led to the localization of the surface of the ribosomal protein S13 at a position compatible with previous assignments, whereas the surface of S11 was localized at a distance of about twice its diameter from the

site suggested for its center by neutron scattering. Proteins S5 and S7, whose structures have been determined crystallographically, were visually placed in the map with no alterations in their conformations. Regions suitable to host the fold of protein S15 were detected in several positions, all at a significant distance from the location of this protein in the neutron scattering map. Targeting the 16S RNA region, where mRNA docks to allow the formation of the initiation complex by a mercurated mRNA analog, led to the characterization of its vicinity.